LUXAIRE®
HEATING ▪ AIR CONDITIONING

TECHNICAL GUIDE

Acclimate

MODELS: FL8V*UH/LL8V*UH

GAS-FIRED
HIGH EFFICIENCY TWO STAGE VARIABLE UPFLOW/HORIZONTAL FURNACES

STANDARD & Low NOx

80% AFUE

NATURAL GAS
57 - 120 MBH INPUT

EFFICIENCY RATING CERTIFIED Gama

DESIGN CERTIFIED

ISO 9000 REGISTRATION
ISO 9001
Certified Quality
Management System

Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at www.york.com for the most up-to-date technical information.

Additional rating information can be found at www.gamanet.org.

DESCRIPTION

These high efficiency, compact units employ induced combustion, reliable hot surface ignition and high heat transfer tubular heat exchangers. The units are factory shipped for installation in upflow or horizontal applications.

These furnaces are designed for residential installation in a basement, closet, alcove, attic, recreation room or garage and are also ideal for commercial applications. All units are factory assembled, wired and tested to assure safe dependable and economical installation and operation.

These units are Category I listed and may be common vented with another gas appliance as allowed by the National Fuel Gas Code.

WARRANTY

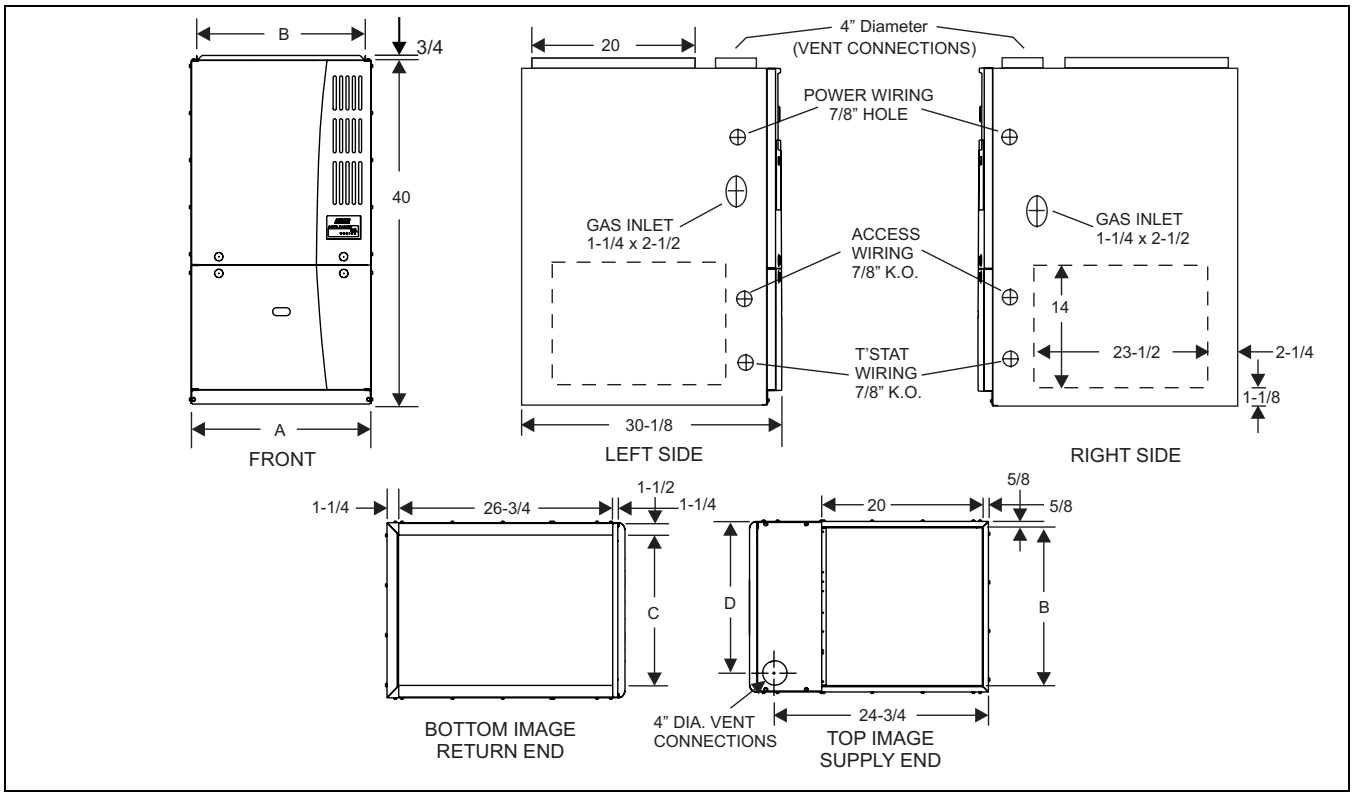
20-year limited warranty on the heat exchanger.

10-year heat exchanger warranty on commercial applications.

5-year limited parts warranty.

FEATURES

- Two stage heating operation includes:
  - Two stage gas valve
  - Two stage inducer operation
  - Variable speed ECM blower operation
- Provides increased comfort level & very quiet unit operation
- Field Selectable delay timer allows two stage operation w/ single stage thermostat
- Acoustically insulated blower compartment for reduced blower sound level
- Compact, easy to install, ideal height 40" cabinet
- Blower-off delay for cooling SEER improvement.
- Easy to connect power/control wiring.
- Built-in, high level self diagnostics with fault code display.
- Low unit amp requirement for easy replacement application.
- Integrated control module for reliable, economical operation.
- Electronic Hot Surface Ignition saves fuel cost with increased dependability and reliability.
- Induced combustion system with inshot main burners for quiet, efficient operation.
- 100% shut off main gas valve for extra safety.
- Variable Speed ECM with large, quiet blower.
- Geotrak Technology allows dealer to customize comfort settings based on regional location.
- 24V, 40 VA control transformer and blower relay supplied for add-on cooling.
- Hi-tech tubular aluminized steel primary heat exchanger.
- Timed on, adjustable off blower capability for maximum comfort.
- Solid removable bottom panel allows easy application.
- Easy access from front of unit for cleaning, maintenance or service.
- Insulated blower compartment for quiet operation.
- Independent door removal for greater durability and ease of access.
- Low NOx models have been designed to meet specific code requirements.
- Low NOx models may not be converted to propane unless screens are removed.



CABINET AND DUCT DIMENSIONS

Models	CFM	Cabinet Size	Cabinet Dimension			
			A	B	C	D
(F,L)L8V060A12UH11	1200	A	14 1/2	13 1/4	11 1/2	10 1/8
FL8V080A12UH11 LL8V080A12UH12	1200	A	14 1/2	13 1/4	11 1/2	10 1/8
FL8V080B16UH11	1600	B	17 1/2	16 1/4	14 1/2	11 5/8
FL8V080C16UH11	1600	C	21	19 3/4	18	13 3/8
FL8V100B16UH11 LL8V100B16UH12	1600	B	17 1/2	16 1/4	14 1/2	11 5/8
(F,L)L8V100C16UH11	1600	C	21	19 3/4	18	13 3/8
FL8V100C20UH11 LL8V100C20UH12	2000	C	21	19 3/4	18	13 3/8
FL8V120C20UH11 LL8V120C20UH12	2000	C	21	19 3/4	18	13 3/8

RATINGS & PHYSICAL / ELECTRICAL DATA

Models	Input/Cabinet High/Low	Output BTU/H High/Low	Nominal Airflow	Cabinet Width	AFUE	Blower		Blower Size
	MBH	MBH	CFM	In		Hp	Amps	In
(F,L)L8V060A12UH11	57/42	46/34	1200	14-1/2	80.0	1/2	7.7	10 x 8
FL8V080A12UH11 LL8V080A12UH12	80/59	64/48	1200	14 1/2	80.0	1/2	7.7	10 x 8
FL8V080B16UH11	80/59	64/48	1600	17-1/2	80.0	3/4	9.6	10 x 10
FL8V080C16UH11	80/59	64/48	1600	21	80.0	3/4	9.6	10 x 10
FL8V100B16UH11 LL8V100B16UH12	100/65	80/53	1600	17 1/2	80.0	3/4	9.6	10 x 10
(F,L)L8V100C16UH11	100/65	80/53	1600	21	80.0	3/4	9.6	10 x 10
FL8V100C20UH11 LL8V100C20UH12	100/65	80/53	2000	21	80.0	1	12.8	11 x 10
FL8V120C20UH11 LL8V120C20UH12	120/78	96/64	2000	21	80.0	1	12.8	11 x 10

Models	Input/Cabinet High/Low	Max. Outlet Air Temp	Low Fire Air Temp. Rise	High Fire Air Temp. Rise	Total Unit Amps	Max Over-Current Protect	Min. wire Size (awg) @ 75 ft one way	Operation Weight
	MBH	°F	°F	°F				Lbs
(F,L)L8V060A12UH11	57/42	165	25-55	35-65	9.0	20	14	107
FL8V080A12UH11 LL8V080A12UH12	80/59	170	30-60	40-70	9.0	20	14	117
FL8V080B16UH11	80/59	155	25-55	25-55	12.0	20	14	129
FL8V080C16UH11	80/59	155	25-55	25-55	12.0	20	14	140
FL8V100B16UH11 LL8V100B16UH12	100/65	170	25-55	40-70	12.0	20	14	128
(F,L)L8V100C16UH11	100/65	170	25-55	40-70	12.0	20	14	140
FL8V100C20UH11 LL8V100C20UH12	100/65	170	25-55	40-70	14.0	20	12	145
FL8V120C20UH11 LL8V120C20UH12	120/78	165	25-55	35-65	14.0	20	12	147

Annual Fuel Utilization Efficiency (AFUE) numbers are determined in accordance with DOE Test procedures.
Wire size and over current protection must comply with the National Electrical Code (NFPA-70-latest edition) and all local codes.
The furnace shall be installed so that the electrical components are protected from water.

AIR FLOW DATA

HIGH / LOW SPEED COOLING AND HEAT PUMP CFM					
(F,L)L8V060A12UH11		FL8V080A12UH11/LL8V080A12UH12		Jumper Settings	
High	Low	High	Low	COOL Tap	ADJ Tap*
1342	872	1342	872	A	B
1155	751	1155	751	B	B
1220	793	1220	793	A	A
1050	683	1050	683	B	A
1098	714	1098	714	A	C
913	593	913	593	C	B
945	614	945	614	B	C
726	472	726	472	D	B
830	540	830	540	C	A
660	429	660	429	D	A
747	486	747	486	C	C
594	386	594	386	D	C
FL8V080B16UH11 FL8V080C16UH11		FL8V100B16UH11/LL8V100B16UH12 (F,L)L8V100C16UH11		Jumper Settings	
High	Low	High	Low	COOL Tap	ADJ Tap*
1650	1073	1650	1073	A	B
1540	1001	1540	1001	B	B
1500	975	1500	975	A	A
1400	910	1400	910	B	A
1350	878	1350	878	A	C
1320	858	1320	858	C	B
1260	819	1260	819	B	C
1100	715	1100	715	D	B
1200	780	1200	780	C	A
1000	650	1000	650	D	A
1080	702	1080	702	C	C
900	585	900	585	D	C
FL8V100C20UH11/LL8V100C20UH12		FL8V120C20UH11/LL8V120C20UH12		Jumper Settings	
High	Low	High	Low	COOL Tap	ADJ Tap*
2052	1334	2052	1333	A	B
1760	1144	1760	1144	B	B
1865	1212	1865	1212	A	A
1600	1040	1600	1040	B	A
1679	1091	1679	1091	A	C
1540	1001	1540	1001	C	B
1440	936	1440	936	B	C
1320	858	1320	858	D	B
1400	910	1400	910	C	A
1200	780	1200	780	D	A
1260	819	1260	819	C	C
1080	702	1080	702	D	C
HIGH / LOW HEAT CFM					
(F,L)L8V060A12UH11		FL8V080A12UH11/LL8V080A12UH12		Jumper Settings	
High	Low	High	Low	HEAT Tap	ADJ Tap*
1220	952	1315	986	A	Any
950	741	1185	889	B	Any
825	644	1075	806	C	Any
750	585	990	743	D	Any
FL8V080B16UH11 FL8V080C16UH11		FL8V100B16UH11/LL8V100B16UH12 (F,L)L8V100C16UH11		Jumper Settings	
High	Low	High	Low	HEATTap	ADJ Tap*
1700	1411	1480	1110	A	Any
1600	1328	1350	1013	B	Any
1500	1245	1205	904	C	Any
1400	1162	1115	836	D	Any
FL8V100C20UH11/LL8V100C20UH12		FL8V120C20UH11/LL8V120C20UH12		Jumper Settings	
High	Low	High	Low	HEAT Tap	ADJ Tap*
1485	1114	2000	1700	A	Any
1375	1031	1725	1466	B	Any
1260	945	1575	1339	C	Any
1185	889	1440	1224	D	Any

All CFM's are shown at 0.5" w.c. external static pressure. These units have variable speed motors that automatically adjust to provide constant CFM from 0.0" to 0.6" w.c. static pressure. From 0.6" to 1.0" static pressure, CFM is reduced by 2% per 0.1" increase in static.

Operation on duct systems with greater than 1.0" w.c. external static pressure is not recommended.

NOTE: At some settings, LOW COOL and/or LOW HEAT airflow may be lower than what is required to operate an airflow switch on certain models of electronic air cleaners. Consult the instructions for the electronic air cleaner for further details.

* The ADJ "D" tap should not be used.

HORIZONTAL SIDEWALL VENTING

For applications where vertical venting is not possible, the only approved method of horizontal venting is the use of an auxiliary power vent. Approved power venters are Fields Controls Model SWG-4Y or the appropriate Tjernlund GPAK model. Follow all application and installation details provided by the manufacturer of the power vent. This unit may be horizontally vented using 4" (10.2 cm) diameter pipe with a minimum length of 4.5 feet (1.37 m) and a maximum length of 34.5 feet (10.82 m) with up to 4 elbows.

FILTER PERFORMANCE

The airflow capacity data published in the "Blower Performance" table listed above represents blower performance WITHOUT filters. To determine the approximate blower performance of the system, apply the filter drop value for the filter being used or select an appropriate value from the "Filter Performance" table shown below.

NOTE: The filter pressure drop values in the "Filter Performance" table shown below are typical values for the type of filter listed and should only be used as a guideline. Actual pressure drop ratings for each filter type vary between filter manufacturer.

FILTER SIZES

Cabinet Size	Side (in)	Bottom (in)
A	16 x 25	14 x 25
B	16 x 25	16 x 25
C	(2) 16 x 25	20 x 25
D	(2) 16 x 25	20 x 25

NOTES:

1. Air velocity through throwaway type filters may not exceed 300 feet per minute. All velocities over this require the use of high velocity filters.
2. Air flows above 1800 CFM require either return from two sides or one side plus bottom.

FILTER PERFORMANCE - PRESSURE DROP INCHES W.C. AND (KPA)

Airflow Range	Minimum Opening Size	Filter Type		
		Disposable	Washable Fiber	Pleated
CFM	in^2	In W.C.	In W.C.	In W.C.
0 - 750	230	0.01	0.01	0.15
751 - 1000	330	0.05	0.05	0.20
1001 - 1250	330	0.10	0.10	0.20
1251 - 1500	330	0.10	0.10	0.25
1501 - 1750	380	0.15	0.14	0.30
1751 - 2000	380	0.19	0.18	0.30
2001 & Above	463	0.19	0.18	0.30

APPLYING FILTER PRESSURE DROP TO DETERMINE SYSTEM AIRFLOW

To determine the approximate airflow of the unit with a filter in place, follow the steps below:

1. Select the filter type.
2. Select the number of return air openings or calculate the return opening size in square inches to determine the proper filter pressure drop.
3. Determine the External System Static Pressure (ESP) without the filter.
4. Select a filter pressure drop from the table based upon the number of return air openings or return air opening size and add to the ESP from Step 3 to determine the total system static.
5. If total system static is less than 0.6" w.c. (150 Pa), then the CFM is the value in Table 15.
6. If the total system static is greater than 0.6" w.c. (150 Pa), then the CFM is reduced by 2% per 0.1" w.c. (25 Pa) increase in static and can be calculated by using the following example:

Example: For an 80,000 BTUH (23.4 kW) furnace operating on HI COOL TAP B and ADJUST TAP A, it is found that total system static is 0.68" w.c. (170 Pa).

To determine the system airflow, complete the following steps:

Airflow @ 0.60": 1400 CFM (39.6 m^3/min)

Subtract the total system static from 0.60" w.c. (150 Pa) and divide this by 0.1" w.c. (25 Pa).

0.68 (170 Pa) - 0.60 (150 (Pa) = 0.08 (20 Pa)
0.08 (20 Pa) / 0.1 (25 Pa) = 0.8

Multiply this by 2% to obtain the percentage reduction in airflow.

0.8 x 0.02 = 0.016

Multiply percentage reduction in airflow by the airflow in the table to obtain the airflow reduction.

0.016 x 1400 (39.6 m^3/min) = 22 (0.6 m^3/min)

Subtract airflow reduction value from airflow in the table to obtain actual airflow @ 0.68" w.c. (170 Pa) ESP.

1400 (39.6 m^3/min) - 22 (0.6 m^3/min) = 1378 (39.0 m^3/min).

UNIT CLEARANCES TO COMBUSTIBLES (ALL DIMENSIONS IN INCHES, AND ALL SURFACES IDENTIFIED WITH THE UNIT IN AN UPFLOW CONFIGURATION)

Application	Top	Front	Rear	Left Side	Right Side	Flue	Floor/ Bottom	Closet	Alcove	Attic	Line Contact
Upflow	1	6	0	0	3	6	Combustible	Yes	Yes	Yes	No
Upflow B-Vent	1	3	0	0	0	1	Combustible	Yes	Yes	Yes	No
Horizontal	1	6	0	0	3	6	Combustible	No	Yes	Yes	Yes[1]
Horizontal B-Vent	1	3	0	0	0	1	Combustible	No	Yes	Yes	Yes[1]

1 Line contact only permitted between lines formed by the intersection of the rear panel and side panel (top in horizontal position) of the furnace jacket and building joists, studs or framing.

ACCESSORIES

PROPANE (LP) CONVERSION KIT -

1NP0347 - All units

This accessory conversion kit may be used to convert natural gas (N) units for propane (LP) operation. Conversions must be made by qualified distributor or dealer personnel.

SIDE RETURN FILTER -

1SR0302 - All Models

1SR0200 - All Models

BOTTOM RETURN FILTER -

1BR0114 or 1BR0214 - For 14-1/2” cabinets

1BR0117 or 1BR0217 - For 17-1/2” cabinets

1BR0121 or 1BR0221 - For 21” cabinets

1BR0124 or 1BR0224 - For 24-1/2” cabinets

INTERNAL FILTER WITH FIBER FILTER -

1HF0801 - All Models

HIGH ALTITUDE PRESSURE SWITCHES -

For installation where the altitude is less than 8,000 feet it is not required that the pressure switch be changed. For altitudes above 8,000 feet see kits below. Conversion must be made by qualified distributor or dealer personnel.

1PS0313 - 057, 080, 100 MBH

1PS0314 - 120 MBH

ROOM THERMOSTATS - A wide selection of compatible thermosets are available to provide optimum performance and features for any installation.

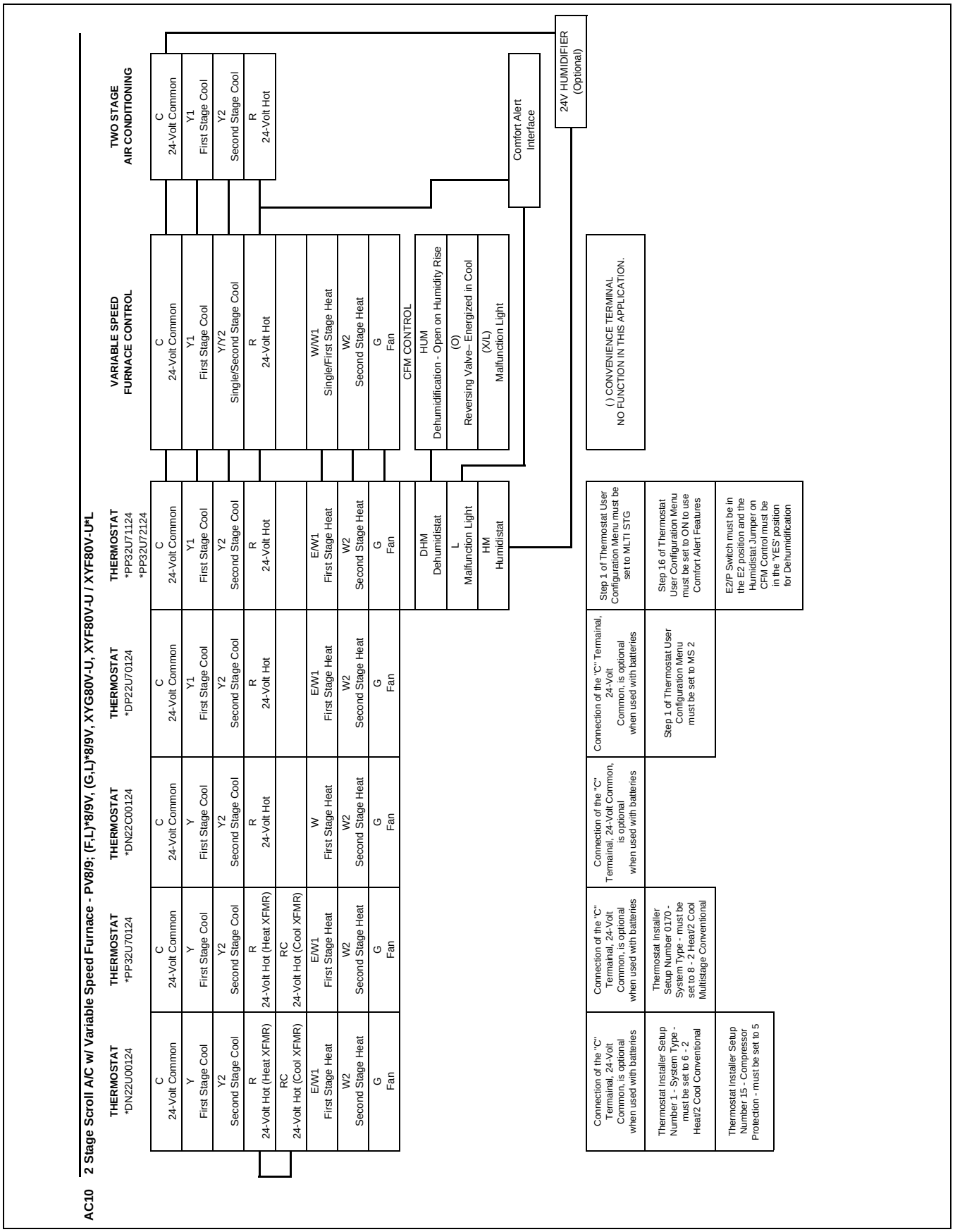
1H/1C, manual change-over electronic non-programmable thermostat.

1H/1C, auto/manual changeover, electronic programmable, deluxe 7-day, thermostat.

1H/1C, auto/manual changeover, electronic programmable.

* For the most current accessory information, refer to the price book or consult factory.

For additional connection diagrams for all UPG equipment refer to “Low Voltage System Wiring” document available online at www.upgnet.com in the Product Catalog Section.



Thermostat Chart - AC

Thermostat Chart - HP

246761-LTG-C-0407
Supersedes:246761-LTG-B-0806